On the State Observation and Stability for Uncertain Nonlinear Systems.

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Abstract: In this paper, we treat the class of nonlinear uncertain dynamic systems that was considered in [D. M. Dawson, Z. Qu and J. C.Carroll: On the state observation and output feedback problems for nonlinear uncertain dynamic systems. Sysems Control Lett. 18 (1992), 217–222.]. We consider continuous-time dynamical systems whose nominal part is linear and whose uncertain part is norm-bounded. We study the problems of state observation and obtaining stabilizing controller for uncertain nonlinear systems, where the uncertainties are characterized by known bounds.